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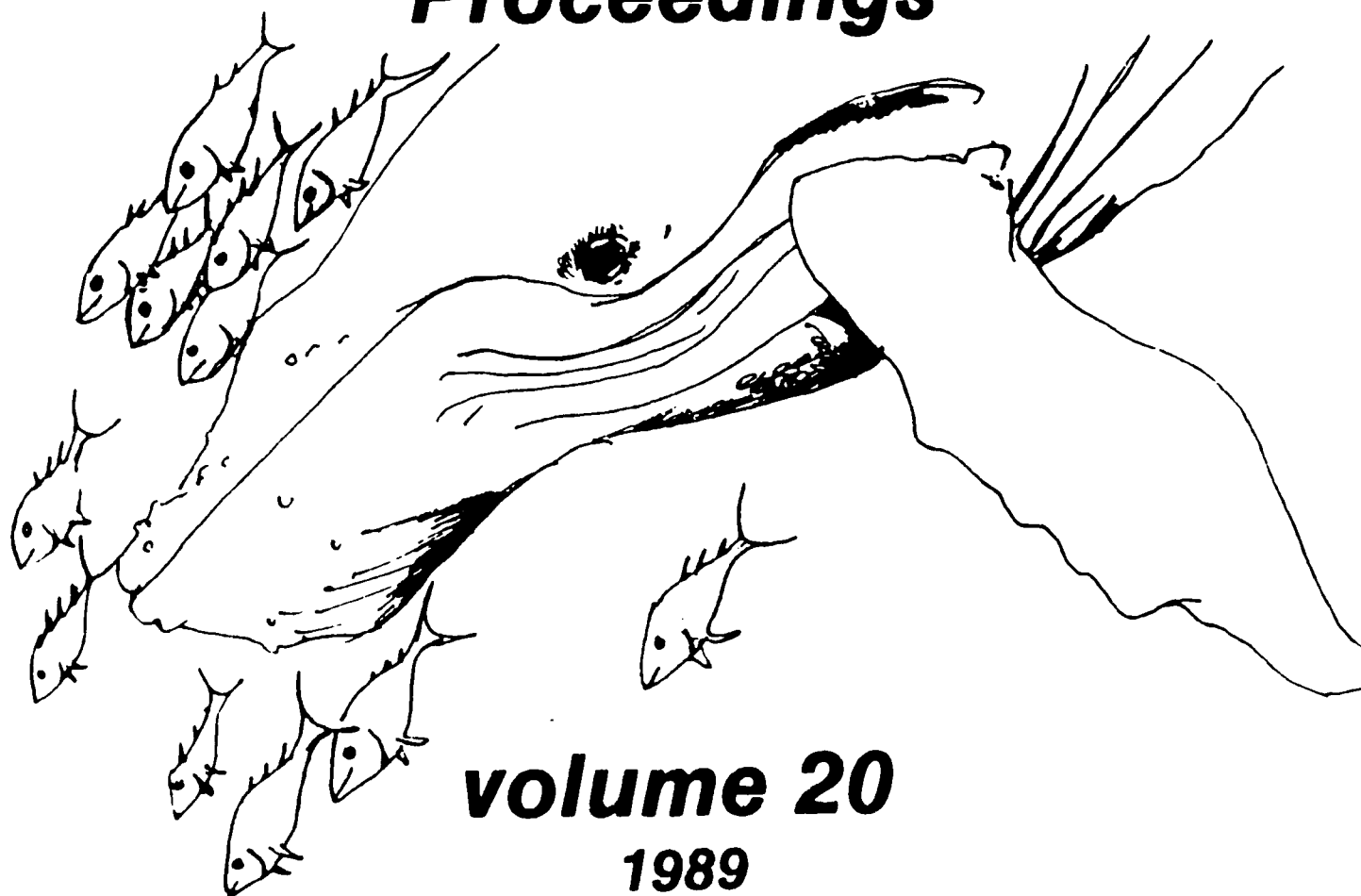
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ACUTE PHASE RESPONSE KINETICS OF THE DOLPHIN:  
DIAGNOSTIC AND THERAPEUTIC CONSIDERATIONS

Brad Fenwick DVM, MS, Ph.D. and J.P. Schroeder DVM

The acute phase response is a series of biochemical changes occurring in association with inflammation and/or tissue injury. The identification of patients experiencing an acute phase response has been a useful diagnostic technique in several species. Knowledge of the kinetics of the acute phase response allows estimation of the time course of an illness as well as to evaluate the success of a specific treatment regime. Similar information concerning the acute phase response in dolphins would be valuable. Sequential hematologic and biochemical changes that occurred following an acute phase response in dolphins were recorded.

Acute phase responses were induced in adult male and female dolphins by a single intramuscular injection of a standard immunizing dose of a commercial Erysipelothrix rhusiopathiae vaccine mixed with an equal volume of penicillin. Biochemical and hematologic evaluations were performed prior to and for two to three weeks following the vaccination of three subjects.

No changes were noted in the behavior or appetite of the subject dolphins during the course of the study. The only biochemical or hematologic changes identified were: (1) a decrease in total serum iron concentration and, (2) an increase in erythrocyte sedimentation rate. The kinetics of these changes differed significantly. Total serum iron concentration increased before erythrocyte sedimentation rate increased and serum iron concentrations returned to pre-injection control values prior to normalization of the erythrocyte sedimentation rate.

The data indicate that both total serum iron and erythrocyte sedimentation rate are sensitive and reliable indicators of the dolphin's acute phase response. The routine evaluation of these parameters can improve our ability to evaluate the time course and severity of inflammatory diseases as well as the effectiveness of medical therapy in dolphins.

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